

Significance of Nutrition Facts Label of Food Products with Critical Updates by FDA on Nutrition Facts Label

¹Rania Ibrahim Mohammad Almoselhy, ²Afreen Usmani, ^{3,4}Peymaneh Ghasemi Afshar and

^{3,4}Morteza Adeli Milani

¹Department of Oils and Fats Research, Food Technology Research Institute, Agricultural Research Center, Giza, Egypt

²Umapati Mahadev College of Pharmacy, Amroha, Uttar Pradesh 244221, India

³Department of Food Science and Technology, Hidaj Branch, Islamic Azad University, Hidaj, Iran

⁴Department of Food Science and Technology, Karaj Branch, Islamic Azad University, Karaj, Iran

ABSTRACT

Background and Objective: Nutrition Facts Label is a mandatory act adopted by FDA to be implemented by all food manufacturers to ensure perfect labeling of all food products with nutritional ingredients provided on the front of pack (FOP) to support healthy eating behaviors. Significance of Nutrition Facts Label with its update by FDA were highlighted here to recommend the implementation of the prompt updating of the Nutrition Facts Label on all food products. **Materials and Methods:** A survey was carried out in the local markets in three different countries, Egypt, India and Iran in the last 3 years (2020-2022) to check the Nutrition Facts Label on the front of pack (FOP) of different categories of food products to check the consistency and variation in their printing on FOP. The well-structured publications and official documents of FDA were studied thoroughly to extract the valuable updated data to be presented in an informative and concise way. **Results:** From the recent official document of FDA issued in 2022 regarding the changes on the new nutrition and supplement facts labels, many changes listed beginning with the structure of the Nutrition Facts Label with many changes in daily value of nutrients by increase or decrease with addition of two new nutrients (added sugars and choline) which were not present in FDA, 2018. **Conclusion:** The current paper successfully presents very important updates on Nutrition Facts Label by FDA to be implemented by all food manufacturers under the control of official regulatory authorities and to be available for all people in order to endorse healthier eating behavior.

KEYWORDS

Nutrition facts label, Food and Drug Administration (FDA), daily value, nutrients, calories, front of pack (FOP), healthy eating behavior

Copyright © 2023 Almoselhy et al. This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The Nutrition Facts Label by the Food and Drug Administration (FDA) has been designed to be implemented by all food manufacturers under the supervision and control of official regulatory authorities to ensure the perfect labeling of all food products with nutritional ingredients and calories per serving to be provided on the front of the pack (FOP) in order to support healthy eating behaviors. Nutrition facts



are considered a mandatory act for labeling food products with essential nutrients as fat, carbohydrate, dietary fiber, protein, vitamins, minerals and energy expressed as calories per serving for supporting healthier diets approaches¹.

Nutritional labels still have a limited impact on dietary decisions. A required but insufficient requirement for behavior change is information provision alone. People must do two things: convert information into knowledge and change behavior using that knowledge. The results offer scant evidence for the value of referencing nutrition labels in teaching materials or other sources. The research is encouraging for complementing nutrition labels with interactive digital interventions, such as feedback from shopping carts or monetary incentives. The results as a whole show that more intrusive interventions are needed to motivate people to act on nutrition labels².

The demand for better food processing and innovative value-added products that adhere to the highest quality standards has increased due to changing consumer demands. It's possible that dietary changes could result in a demand for fewer salt goods, thus the industry must pay close attention to nutritional claims and proper labeling³.

Front-of-pack nutrition labels (FOPLs) are emphasized in global policy conversations, but arguments about the best format run on. The summary and informative label formats are the two main categories. It is recommended that FOPLs in developing nations with mixed to low levels of education be easily recognizable, intelligible and able to influence purchasing decisions⁴.

The majority of added sugar consumed in the United States comes from sugar-sweetened beverages and the Food and Drug Administration (FDA) recently changed the nutrition facts label to reflect this information. The Nutrition Facts Label (NFL) revisions are happening at the same time that some towns have implemented legislation that levies an excise tax on beverages with added sugar. The revised NFL has the potential to modify the demand curve by reducing friction and mental gaps associated with the conveyance of nutrition information, whilst taxes on sugar-sweetened beverages may be successful at changing the quantity required⁵.

The purpose of the current study was to present the critical updates on the structure and information of the Nutrition Facts Label and comparing the original and updated versions. The original version of Nutrition Facts label had been issued by the Center for Food Safety and Applied Nutrition, Food and Drug Administration (FDA): September 1994, revised April 2008, revised October 2009, revised January 2013 with the current version issued September 2018⁶ and the new updated label of nutrition facts label had been issued by FDA: March 2020 with the current version issued February 2022⁷.

MATERIALS AND METHODS

Study area: A survey was carried out in local markets of three different countries, Egypt, India and Iran in the last three years (2020-2022) to check the Nutrition Facts Label on the front of pack (FOP) of different categories of food products to gather useful information about the consistency and variation in the style of printing Nutrition Facts Label on food products including grains such as rice, wheat, oats, corn, barley and fast foods including snacks food e.g., potato chips, popcorn, cookies, biscuits, chocolate, candy, ice cream, crackers, cake, milk, yogurt, nuts and seeds, tea and herbs, juices, along with different dietary supplements. Well-structured publications and official documents of FDA^{6,7} were studied thoroughly to extract valuable updated data to be presented in an informative and concise way.

RESULTS AND DISCUSSION

It is noteworthy to mention the wide range of different categories of food products examined in the markets where the great variation in listing the Nutrition Facts Label on the front of pack (FOP) was

Table 1: Daily value changes for nutrients

Nutrient	Original daily value	Updated daily value
Daily value increases		
Calcium	1000 mg	1300 mg
Dietary fiber	25 g	28 g
Fat	65 g	78 g
Magnesium	400 mg	420 mg
Manganese	2 mg	2.3 mg
Phosphorous	1000 mg	1250 mg
Potassium	3500 mg	4700 mg
Vitamin C	60 mg	90 mg
Vitamin D	400 IU	20 mcg (800 IU)
Vitamin K	80 mcg	120 mcg
Daily value decreases		
Biotin	300 mcg	30 mcg
Chloride	3400 mg	2300 mg
Chromium	120 mcg	35 mcg
Copper	2 mg	0.9 mg
Molybdenum	75 mcg	45 mcg
Niacin	20 mg	16 mg
Pantothenic acid		
Riboflavin	10 mg	5 mg
Selenium	1.7 mg	1.3 mg
Sodium	70 mcg	55 mcg
Thiamin	2400 mg	2300 mg
Total carbohydrate		
Vitamin A	1.5 mg	1.2 mg
Vitamin B ₆	300 g	275 g
Vitamin B ₁₂	5000 IU	900 mcg (3000 IU)
Vitamin E	2 mg	1.7 mg
Zinc	6 mcg	2.4 mcg
Vitamin E	30 IU	15 mg (22.4 IU)
Zinc	15 mg	11 mg
Daily values not changed		
Cholesterol	50 g	300 mg
Iodine	20 g	150 mcg
Iron	50 g	18 mg
Protein	20 g	50 g
Saturated fat	--	20 g
New daily values		
Added sugars	--	50 g
Choline	--	550 mg

Retrieved from "FDA (2022) daily value on the new nutrition and supplement facts labels"⁷

observed. Food products needs to be updated with the correct label according to the last update of Nutrition Facts Label by FDA. Figure 1(a-b) and Table 1 summarize the results of this study as following.

Figure 1 illustrates the original label in (a) Nutrition Facts label issued by Center for Food Safety and Applied Nutrition: September 1994, revised April 2008, revised October 2009, revised January 2013 with the current issue September 2018⁶ and the new label in (b) Nutrition Facts Label by FDA 2022⁷, it is noticed some changes in the structure of the New Label by removing "Calories from Fats" and removing the lower part including the daily values based on 2,000 and 2,500 calories and listing "2,000 calories a day is used for nutrition advice. Also, 2 new rows were added for: Total sugars and added sugars with some modifications on the overall structure. Nutrients present with daily value 5% or less per serving are considered low, whereas, nutrients present with 20% or more are considered high.

From Table 1, it is noticed the different changes in daily value of nutrients, where 10 of them increased (calcium, dietary fiber, fat, magnesium, manganese, phosphorous, potassium, vitamin C, D and K), 17 decreased (biotin, chloride, chromium, copper, molybdenum, niacin, pantothenic acid, riboflavin,

Original label

Nutrition facts		
Serving size 1 pie (283 g)		
Servings per pie container 4		
Amount per serving		
Calories 630	Calories from fat 320	
% Daily value*		
Total fat 36 g	55%	
Saturated fat 14 g	70%	
Trans fat 0 g		
Cholesterol 25 mg	8%	
Sodium 1060 mg	44%	
Total carbohydrate 59 g	20%	
Dietary fiber 5 g	20%	
Sugars 6 g		
Protein 17 g		
Vitamin A	25%	
Vitamin C	4%	
Calcium	5%	
Iron	6%	
*Percent daily values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calories needs.		
Calories:	2,000 2,500	
Total fat	Less than 65 g	80 g
Sat fat	Less than 20 g	25 mg
Cholesterol	Less than 300 mg	300 mg
Sodium	Less than 2,400 mg	2,400 mg
Total carbohydrate	300 g	375 g
Dietary fiber	25 g	30 g

New label

Nutrition facts	
4 Servings per container	
Serving size	1 pie (283 g)
Amount per serving	
Calories	630
% Daily value*	
Total fat 36 g	46%
Saturated fat 14 g	70%
Trans fat 0 g	
Cholesterol 25 mg	8%
Sodium 1060 mg	46%
Total carbohydrate 59 g	21%
Dietary fiber 5 g	18%
Total sugars 6 g	
Includes <1 g added sugars	2%
Protein 17 g	
Vitamin D 0 mcg	0%
Calcium 52 mg	4%
Iron 1.1 mg	6%
Potassium 210 mg	4%

*The % daily value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Fig. 1(a-b): Nutrition facts label of chicken pot pie frozen dinner (a) original label and (b) new label
(Retrieved from "FDA, 2022 daily value on the new nutrition and supplement facts labels"⁷)

selenium, sodium, thiamin, total carbohydrate, vitamin A, B₆, B₁₂ and E, zinc), 5 not changed (cholesterol, iodine, iron, protein, saturated fat) and 2 new nutrients (added sugars, choline) appeared. Also, new units for measuring the concentrations of vitamin A, D and E were introduced to measure them in micrograms "mcg" instead of international unit "IU" which had been used for years in the original daily value.

The current paper has been written as a short communication to highlight the current status of food labeling with the recent updates on the Nutrition Facts Label by FDA to be implemented by all manufacturers and producers concerned with food products with prompt application on the front of pack (FOP) as recommended by official organizations without any limitations.

CONCLUSION

The current paper achieved its purpose successfully by presenting the updates of the nutrition facts label according to the Food and Drug Administration (FDA) in a clear, informative and concise way to be easy to understand by anyone and to be applied effectively to all food products with a sufficient comparison with the former original label in order to endorse the healthy eating behavior.

SIGNIFICANCE STATEMENT

The aim of the current paper was to present the recent updates on Nutrition Facts Label by FDA in an informative and concise way to highlight the changes in structure of Nutrition Facts Label with the changes in the daily value of nutrients, where some of them increased and others decreased. Whereas, a third group remained unchanged with appearance of two new ingredients mentioned in the updated Nutrition Facts label by FDA 2022.

REFERENCES

1. Almoselhy R.I.M., 2023. Formulation and evaluation of novel nutraceuticals rich in protein, vitamins, minerals, natural flavors, and steviol glycosides for improving quality of life. *Food Sci. Appl. Biotechnol.*, 6: 357-371.
2. Schruff-Lim, E.M., E.J. van Loo, E. van Kleef and H.C.M. van Trijp, 2023. Turning FOP nutrition labels into action: A systematic review of label+interventions. *Food Policy*, Vol. 120. 10.1016/j.foodpol.2023.102479.
3. Giró-Candanedo, M., I. Muñoz, P. Gou and E. Fulladosa, 2023. Precise nutritional labelling of sliced packaged dry-cured ham using multi-energy X-ray absorptiometry. *Meat Sci.*, Vol. 204. 10.1016/j.meatsci.2023.109260.
4. Ghosh, R.K., R. Sanghvi and A. Sahay, 2023. Consumer preference for nutrition front-of-pack-label formats in India: Evidence from a large-scale experimental survey. *Food Qual. Preference*, Vol. 111. 10.1016/j.foodqual.2023.104993.
5. Neuhofer, Z., B.R. McFadden, A. Rihn, X. Wei, H. Khachatryan and L. House, 2020. Can the updated nutrition facts label decrease sugar-sweetened beverage consumption? *Econ. Hum. Biol.*, Vol. 37. 10.1016/j.ehb.2020.100867.
6. FDA, 2018. Guidance for Industry: Food Labeling Guide. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-food-labeling-guide>.
7. FDA, 2023. Daily Value on the Nutrition and Supplement Facts Labels. <https://www.fda.gov/food/new-nutrition-facts-label/daily-value-new-nutrition-and-supplement-facts-labels>.